

# **WIDER WORKING PAPERS**

**Gender and Cooperative Conflicts**

**Amartya Sen**

**WP 18**

**July 1987**

*Drummond Professor of Political Economy Oxford  
University and Research Advisor  
World Institute for Development Economics Research  
Helsinki*



**GENDER AND COOPERATIVE CONFLICTS**

Amartya Sen  
Drummond Professor of Political Economy  
Oxford University  
and  
Research Advisor  
World Institute for Development Economics Research  
Helsinki

July 1987

WIDER  
Annankatu 42  
00100 HELSINKI  
FINLAND

## CONTENTS

1. Introduction (p.1)
2. Capabilities, well-being, agency and perceptions (p.6)
3. Social Technology, cooperation and conflicts (p.10)
4. Households economics, bargaining models and information bases (p.15)
5. Cooperative conflicts: Interests, contributions and perceptions (p.20)
6. Extended entitlements and perceived legitimacy (p.30)
7. Production, earnings and perceived contributions (p.37)
8. Well-being, agency and cooperative conflicts (p.42)

GENDER AND COOPERATIVE CONFLICTS\*

1. Introduction

In the standard literature on economic development there is frequently a noticeable reluctance to consider the position of women as a separate problem of importance of its own. Gender-based analysis is often seen as being unnecessarily divisive. Poverty, undernourishment, escapable morbidity or avoidable mortality strike men as well as women, and the lives of all members - male and female - of households at the bottom of the pile are plagued by severe deprivations. It is, therefore, not surprising that many writers insist on seeing the deprivation of entire families as the right focus for studying misery and for seeking remedies, concentrating on the placing of families in the class structure and in the economic and social hierarchy (and also on the over-all prosperity of the community).

That non-gender view has much plausibility in some contexts. However, for some problems income and class categories are over-aggregative and even misleading, and there is a need for gender classification. In fact, the importance of gender as a crucial parameter in social and economic analysis is complementary to, rather than competitive with, the variables of class, ownership, occupations, incomes and family status.

---

\* This paper draws heavily on two previous attempts to address this set of issues, viz., "Cooperative Conflicts: Technology and the Position of Women", mimeographed, All Souls College, Oxford, 1983, and "Women, Technology and Sexual Divisions", Trade and Development (UNCTAD), 6 (1985). For helpful comments I am most grateful to Jocelyn Kynch and Irene Tinker. My thinking on this question has been deeply influenced by discussions with my late wife, Eva Colorni, over a number of years, until her tragic death on 3 July, 1985, and it is to her memory that I dedicate this essay.

The systematically inferior position of women inside and outside the household in many societies points to the necessity of treating gender as a force of its own in development analysis. The economic hardship of woman-headed households is both a problem of female deprivation and of family poverty. Furthermore, females and males in the same family may well have quite divergent predicaments, and this can make the position of women in the poorer families particularly precarious. To concentrate on family poverty irrespective of gender can be misleading in terms of both causation and consequences.

The fact that the relative deprivation of women vis-a-vis men is by no means uniform across the world does not reduce the importance of gender as a parameter of analysis. In fact, this variability is itself an important reason for giving serious attention to the causal antecedents of the contrasting deprivations. To take an extremely simple and crude example, it is clear that despite the evident biological advantages that women seem to have over men in survival and longevity (when there is some symmetry in the attention they receive on basic matters of life and death, such as nutrition, health care and medical attention), there is nevertheless a remarkable preponderance of surviving men over surviving women in the population of less developed countries (the LDCs) taken as a whole, in sharp contrast with the position of the more developed countries. While there are about 106 women per 100 men in Europe and North America, there are only 97 women per 100 men in the LDCs as a whole. Since mortality and survival are not independent of care and neglect, and are influenced by social action and public policy, even this extremely crude perspective cannot fail to isolate gender as an important parameter in development studies.

There are also systematic differences among the LDCs in the survival

rates of females vis-à-vis males. While Asia has a sex ratio (females per male) of only 0.95, Africa comes closer to Europe and North America with a sex ratio of 1.02 - indeed considerably higher than that in non-Northern Africa. Even within Asia the sex ratio is higher than unity in some regions, e.g. South Eastern Asia (1.01), but much lower in China, Bangladesh and West Asia (0.94) and in India and Pakistan (0.93). There are substantial variations even within a given country, e.g. in India the sex ratio varies between 0.87 and 0.88 in Haryana and Punjab, and 1.03 in Kerala. It is easily checked that had the average African sex ratio obtained in India, then given the number of men, there would have been about 30 million more women in India today.<sup>1</sup> The corresponding number of 'missing women' in China is about 38 million. The cumulative contrasts of sex-specific mortality rates - not unrelated to social and economic inequalities between men and women - find expression in these simple statistics, which form something like the tip of an iceberg much of which is hard to observe.

Development analysis cannot really be divorced from gender categories and sex-specific observations. It is, however, difficult to translate this elementary recognition into practice, and to find an adequate framework for the use of gender categories and sex-specific information in social analysis. This paper is addressed to some of the issues in this difficult field. The problem is far too complex and basic to be 'resolved' by any kind of a simple model, but we can go some distance towards a better understanding of the problem by broadening the conceptual structure and the informational base of gender analysis in economic and social relations.

1. These and related matters are discussed in my C.N. Vakil Lecture to the 8th World Congress of the International Economic Association (see Sen 1986b, in reference). See also Kynch (1985).

In the next section some of the basic notions in the proposed conceptual structure are briefly examined, including 'functionings', 'capabilities', 'well-being' and 'agency'.<sup>2</sup> The role of pereceptions in the informational base of the conceptual structure is also discussed, disputing the identification of well-being with the fulfilment of perceived interests, but making room for the causal influence of perceptions on ideas of propriety and legitimacy of different institutional arrangements and through that on the respective well-beings of men and women.

In section 3 the notion of 'social technology' is presented, broadening the traditional view of technology. Explicit note is taken of the role of household arrangements in sustaining commodity production.

In Section 4, the alternative approaches underlying different theories of household economics are examined. The 'bargaining models' have an advantage over others (such as standard models of 'household production', or 'family allocation', or 'equivalence scales') in capturing the coexistence of extensive conflicts and pervasive cooperation in household arrangements. But it is argued that they too have an inadequate informational base and are particularly negligent of the influence of perceived interests and perceived contributions.

In section 5 an alternative approach to 'cooperative conflicts' is sketched, identifying certain qualitative relations in the form of directional responses of the outcome to certain determining variables in the informational base. In section 6 these relations are translated into a format of 'extended entitlements', based on sharpening the concept of

2. These concepts are more extensively discussed in my Dewey Lectures at Columbia University, published in the Journal of Philosophy (Sen 1985a). See also Sen (1985b).

'entitlements' (already used in studying famines and deprivation of households) by incorporating notions of perceived legitimacy in intra-household divisions.<sup>3</sup>

The directional responses are examined in section 7 in the light of empirical information presented in micro studies as well as in aggregative interregional comparisons. Some concluding remarks are made in the final section.

## 2. Capabilities, well-being, agency and perception

Everyone has many identities. Being a man or a woman is one of them. Being a member of a family is another. Membership of a class, an occupation group, a nation or a community can be the basis of particular links. One's individuality co-exists with a variety of such identities. Our understanding of our interests, well-being, obligations, objectives and legitimate behaviour is influenced by the various - and sometimes conflicting - influences of these diverse identities.

In some contexts the family identity may exert such a strong influence on our perceptions that we may not find it easy to formulate any clear notion of our own individual welfare. Based on empirical observations of family-centred perceptions in some traditional societies (such as India), some authors have disputed the viability of the notion of personal welfare in those societies.<sup>4</sup> It has often been observed that if a typical Indian

3. The notion of 'entitlements' was used, primarily for famine analysis, in Sen (1976, 1981). That of 'extended entitlements' is discussed in Sen (1985c). See also Tilly (1985, 1986) and Vaughan (1985).
4. For a particularly forceful and cogent statement of this position, see Das and Nicholas (1981).

rural woman were asked about her personal 'welfare', she would find the question unintelligible, and if she is able to reply, she may answer the question in terms of her reading of the welfare of her family. The idea of personal welfare may itself be unviable in such a context, it has been argued.

This empirical problem of perception and communication is indeed important. On the other hand, it is far from obvious that the right conclusion to draw from this is the non-viability of the notion of personal welfare. This is so for several distinct reasons. First, there are considerable variations in the perception of individuality even within such a traditional society, and the lack of a perception of personal welfare, where that holds, is neither immutable nor particularly resistant to social development. Indeed, the process of politicization - including a political recognition of the gender issue - can itself bring about sharp changes in these perceptions. So can processes of economic change, such as women's involvement in so-called 'gainful employment' and outside work (on which more presently).<sup>5</sup>

Second, insofar as intrafamily divisions involve significant inequalities in the division of food, medical attention, health care, etc. (often unfavourable to the well-being - even survival - of women), the lack of perception of personal interest combined with a great concern for family welfare is, of course, just the kind of attitude that helps to sustain the traditional inequalities. There is much evidence in history that acute inequalities often survive precisely by making allies out of the deprived. The underdog comes to accept the legitimacy of the unequal order and becomes an implicit accomplice. It can be a serious error to take the

5. See Boserup (1970), Bardhan (1974, 1982), Miller (1981), Sen (1982b, 1985c, 1986b), Mazumdar (1985).

absence of protests and questioning of inequality as evidence of the absence of that inequality (or of the non-viability of that question).

Third, personal interest and welfare are not just matters of perception, and there are objective aspects of these concepts that command attention even when the corresponding self-perception does not exist. For example, the illfare associated with morbidity or undernourishment has an immediacy that does not await the person's inclination or willingness to answer detailed questions regarding his or her own welfare. Indeed, the well-being of a person may plausibly be seen in terms of a person's functionings and capabilities: what he or she is able to do or be (e.g. the ability to be well-nourished, to avoid escapable morbidity or mortality, to read and write and communicate, to take part in the life of the community, to appear in public without shame).<sup>6</sup> While the functionings and the capability to function have to be evaluated (since they are diverse and not directly commensurable), the contingent absence of explicit discussion on this evaluative question does not make these functionings and capabilities valueless. There is a need to go beyond the primitive feelings that a person may have on these matters, based perhaps on unquestioning acceptance of certain traditional priorities. Social change and politicization may well take precisely the form of making people face those evaluative questions.

Finally, it is also possible to distinguish between a person's 'well-being' and 'agency'. A person may have various goals and objectives other than the pursuit of his or her own well-being. While there are obvious links between a person's well-being and the fulfilment of his or her other objectives, the over-all success as an agent may well not be

6. On this, see Sen (1985a, 1985b, 1987).

closely connected – and certainly may not be identified – with that person's own well-being.<sup>7</sup> It is the agency aspect that is most influenced by a person's sense of obligation and perception of legitimate behaviour. These perceptions – while influencible by politics and education – may have relevance of their own (even in their contingent existence), but they must not be confused with the person's well-being, or – alternatively – taken as evidence of the unviability of any personal notion of well-being.

It is, of course, possible to assert the importance of actual mental states as reflections of individual well-being, and in fact, in the utilitarian tradition, the metrics of happiness and desire do occupy a commanding position in the evaluation of individual welfare and through that on the goodness of states of affairs and the rightness of actions. But that approach to welfare and ethics can be – and has been – extensively challenged.<sup>8</sup> Deprived groups may be habituated to inequality, may be unaware of possibilities of social change, may be hopeless about upliftment of objective circumstances of misery, may be resigned to fate, and may well be willing to accept the legitimacy of the established order. The tendency to take pleasure in small mercies would make good sense given these perceptions, and cutting desires to shape (in line with perceived feasibility) can help to save one from serious disappointment and frustration. The deprivations may, thus, be muted in the metric of

7. The distinction between well-being and agency, their interconnections, and their different realms of relevance are discussed in my Dewey Lectures: Sen (1985a).
8. For critiques of the utilitarian measures, see Rawls (1971), Williams (1973), Nozick (1974), Scanlon (1975), Sen (1979), Dworkin (1981), and Parfit (1984), among others. See Gosling (1969) for an exposition of the two perspectives of desire and pleasure in the utilitarian tradition. For sophisticated – and illuminating – defences of the utilitarian calculus, see particularly Harsanyi (1976), Hare (1981) and Griffin (1987).

happiness or desire fulfilment. But the real deprivations are not just washed away by the mere fact that in the particular utilitarian metrics of happiness and desire-fulfilment such a deprived person may not seem particularly disadvantaged. The embarrassment, if there is one here, is for utilitarianism (and for welfarism in general)<sup>9</sup> and not for those who insist that the underfed, under-clothed, undercared or overworked person is in some real sense deeply deprived no matter what the utility metrics say.<sup>10</sup>

The point of arguing this way is not, in fact, to claim that a person's perceptions are not important. Indeed, they may be extremely important in understanding what social and familial arrangements emerge and survive. In fact, in this paper considerable use is made of the nature of actual perceptions in understanding the outcomes of cooperative conflicts (see section 5). But the contingent perceptions are important not because they are definitive guides to individual interests and well-being (this they are not), but because the perceptions (including illusions) have an influence – often a major impact – on actual states and outcomes.

### 3. Social technology, cooperation and conflicts

Technology is often seen in highly limited terms, e.g. as particular mechanical or chemical or biological processes used in making one good or another. The extremely narrow view of technology that emerges from such a

9. On the distinction between the particular approach of utilitarianism (involving the summation of utilities) and 'welfarism' in general (judging of a state of affairs as a function of individual utility information – not necessarily in the form of the sum-total), see Sen (1979) and Sen and Williams (1982).
10. I have tried to discuss these issues more extensively in Sen (1985a). Welfarism is the approach that takes the value of state of affairs to be a function exclusively of utility information regarding that state. Utilitarianism involving the summing of utilities is a special case of welfarism.

limited outlook does little justice to the 'social' content of technology - what Marx called "the combining together of various processes into a social whole".<sup>11</sup> The making of things involves not merely the relationship between, say, raw materials and final products, but also the social organization that permits the use of specific techniques of production in factories or workshops, or on land.

The so-called 'productive' activities may be parasitic on other work being done, e.g. housework and food preparation, the looking after of children, bringing food to the field where cultivators are working. Technology is not only about equipment and its operational characteristics, but also about social arrangements that permit the equipment to be used and the so-called productive processes to be carried on.

Household activities have been viewed in many contradictory ways in assessing production and technology. On the one hand, it is not denied that the sustenance, survival and reproduction of workers are obviously essential for the workers being available for outside work. On the other, the activities that produce or support that sustenance, survival or reproduction are typically not regarded as contributing to output, and are often classified as 'unproductive' labour.

There has been a good deal of recent interest in the problem of valuation of these activities and also in reflecting them in the estimates

11. Marx (1867), p. 515. Marx is discussing here the nature of 'capitalist production' and how it has developed technology into a social whole, "sapping the original sources of all wealth - the soil and the labourer".

of national income and national consumption.<sup>12</sup> However, for the present purpose, these accounting questions are not really central.<sup>13</sup> What is important is to take an integrated view of the pattern of activities outside and inside the home that together make up the production processes in traditional as well as in modern societies.<sup>14</sup> The relations between the sexes are obviously much conditioned by the way these different activities sustain and support each other, and the respective positions depend inter alia on the particular pattern of integration that is used.

The prosperity of the household depends on the totality of various activities - getting money incomes, purchasing or directly producing (in the case of, say, peasants) food materials and other goods, producing eatable food out of food materials, and so on. But in addition to aggregate prosperity, even the divisions between sexes in general, and specifically those within the household, may also be deeply influenced by the pattern of gender division of work. In particular, the members of the

12. See particularly Goldschmidt-Clermont (1982) and the rather large literature surveyed there. There is also the related issue of properly valuing non-household work of women, on which see Beneria (1982), Jain and Chand (1982), Banerjee (1985), Bryceson (1985), Jain (1985), Mukherjee (1985).
13. These questions are, however, important in seeking a better understanding of the social position of women, on which see section 6 below.
14. A particular pattern - that of capitalist production arrangements with family wages being used for household production - is appropriately characterized by Jane Humphries (1977) thus: "the working-class family constitutes an arena of production, the inputs being the commodities purchased with family wages, and one of the outputs being the renewed labour-power sold for wages in the market" (p.142). On the interrelations between problems of class divisions and gender division, see - among other contributions - Benston (1964), Della Costa (1972), Meilllassoux (1972), Rowbotham (1973), Harrison (1974) Seccombe (1974), Gardiner, Himmelweit and Mackintosh (1975), Milkman (1976), Himmelweit and Mohun (1977), Humphries (1977), McIntosh (1978), Young (1978), Mackintosh (1979), Molyneux (1979), Young, Wolkowitz and McCullagh (1981), Mies (1982). See also the studies of experiences in socialist countries, e.g. Croll (1979) and Molyneux (1982).

household face two different types of problems simultaneously, one involving co-operation (adding to total availabilities) and the other conflict (dividing the total availabilities among the members of the household). Social arrangements regarding who does what, who gets to consume what, and who takes what decisions, can be seen as responses to this combined problem of co-operation and conflict. The sexual division of labour is one part of such a social arrangement, and it is important to see it in the context of the entire arrangement.

Seeing social arrangements in terms of a broader view of technology and production has some far-reaching effects. First, it points to the necessity of examining the productive aspects of what are often treated as purely 'cultural' phenomena. It also brings out the productive contributions that are in effect made by labour expended in activities that are not directly involved in 'production', narrowly defined. A deeper probing is especially important in trying to clear the fog of ambiguity in which the roles of different types of labouring activities are hidden by stereotyped social perceptions, and this is of obvious importance in assessing the nature and implications of particular patterns of gender divisions.

Second, it throws light on the stability and survival of unequal patterns of social arrangements in general, and deeply asymmetric sexual divisions in particular. An example is the resilient social division of the labour in most societies by which women do cooking and are able to take on outside work only insofar as that can be combined with persisting as the cook.<sup>15</sup>

[15. See next page.]

Third, the division between paid and unpaid work in the context of general productive arrangements (and 'the combining together of various processes into a social whole') can be seen as bringing in systematic biases in the perception of who is 'producing' what and 'earning' what - biases that are central to understanding the inferior economic position of women in traditional (and even in modern) societies.

Fourth, specific patterns of sexual divisions (and female specialization in particular economic activities) even outside the household can be seen as being partly reflective of the traditional within-household divisions related to established arrangements, which differentially bias the cultivation of skill and tend to sustain asymmetry of opportunities offered for acquiring 'untraditional' skills. In understanding the inferior economic position of women inside and outside the household in most societies, the hold of these social arrangements has to be clearly identified and analysed.<sup>16</sup>

The nature of 'social technology' has a profound effect on relating

15. This pattern also influences the type of outside work for which women are typically thought to be 'suited'. One of the consequences of being offered relatively mechanical jobs involving repetitive activities is greater vulnerability, in many cases, to job loss as a result of mechanisation (on this see Sen 1985c). On the nature of women's job opportunities, see Boserup (1970), Palmer (1985), Standing and Sheehan (1978), Banerjee (1979, 1983a, 1985), Burman (1979), Ahooja-Patel (1980), Amsden (1980), Jain (1980), Deere and de Leal (1982). On the nature of threatened job losses through mechanization and technical change, see Harris (1977), Carr (1978), Palmer (1978), Ahmed (1978, 1983), Loutfi (1980), Agarwal (1981), Date-Bah and Stevens (1981), Whitehead (1981), Ahmed and Loutfi (1982), Beneria (1982), ILO (1982a, 1982b), Ventura-Dias (1982).
16. Even in the United States the average woman worker seems to earn only a fraction of the average male worker's earning (62 percent, to be exact, as reported in 'Female Sacrifice', New York Times, 14 April 1984). These differences arise not so much from different payments to men and women in the same job categories, but from women being more confined to particular types of jobs that are typically less remunerative. On this see Larwood, Stromberg and Gutek (1985), particularly the paper by June O'Neill. See also Hacker (1986).

production and earnings to the distribution of that earning between men and women and to gender divisions of work and resources. The divisional arrangements that, on the one hand, may help in the economic survival and in the over-all opulence of families and societies, may also impose, through the same process, a typically unequal division of job-opportunities and work-freedoms. They influence the division of fruits of joint activities - sometimes sustaining inequalities in the commodities consumed in relation to needs (e.g. of food in poorer economies). The nature of the co-operative arrangements implicitly influences the distributional parameters and the household's response to conflicts of interests.

#### 4. Household economics, bargaining models and informational bases

The simultaneity of cooperation and conflict in gender divisions have often been trivialized in the formal economic literature by making particular - often far-fetched - assumptions. One approach is to see the household arrangements as resulting from implicit markets with transactions at 'as if' market prices (see Becker 1973-74, 1981), even though it may be hard to see how such implicit markets can operate without the institutional support that sustain actual market transactions.

Sometimes, the same basic model can be substantially varied by postulating that the transactions take the form of falling in line with the objectives of an altruistic family-head. As Becker (1981) puts it: "In my approach the 'optimal reallocation' results from altruism and voluntary contributions, and the 'group preference function' is identical to that of the altruistic head, even when he does not have sovereign power" (p.192).<sup>17</sup>

17. On the peculiar nature of this solution, see Manser and Brown (1980), McElroy and Horney (1981), and Pollak (1983). Also Berk and Berk (1978).

Others have assumed that somehow or other - in ways unspecified - an 'optimal' distribution of commodities and provisions takes place within the family, permitting us to see families as if they are individuals (see Samuelson 1956). The central issues of co-operative conflicts are avoided in all these models by one device or another.

Helpful insights can be obtained by seeing divisions as 'bargaining problems', which form a class of co-operative conflicts.<sup>18</sup> The technological interdependences make it fruitful for the different parties to co-operate, but the particular pattern of division of fruits that emerges from such co-operation reflects the 'bargaining powers' of the respective parties. This format certainly has many advantages over the models of 'as if markets', or 'an altruistic leader's dominance', or 'harmonious optimal divisions'. A number of recent contributions have brought out these advantages clearly enough.<sup>19</sup>

Nevertheless, the informational base of the bargaining problem is limited by focussing exclusively on individual interests (typically taken to be cardinally representable), and by the assumption of clear and unambiguous perceptions of these individual interests. The latter assumption misses crucial aspects of the nature of gender divisions inside and outside the family. The sense of appropriateness goes hand in hand with ambiguities of perception of interests, and with certain perceived notions of legitimacy regarding what is 'deserved' and what is not. These

18. 'Bargaining Problems' were first formulated by Nash (1950, 1953), and have been extensively discussed by Luce and Raiffa (1957), Harsanyi (1977), Roth (1979), and Binmore and Dasgupta (1987), among many others. On the normative features of bargaining problems, see Braithwaite (1955), Sen (1970), Kaneko and Nakamura (1979), and Kaneko (1980), among others.

19. See particularly Clemout and Wan (1977), Manser and Brown (1980), McElroy and Horney (1981), Brown and Chuang (1980), Rochford (1981), Pollak (1983), Folbre (1984).

perceptions are also closely related to the nature of the social technology establishing specificity of roles and sustaining a presumption of 'naturalness' of the established order. Also, they have a role in explaining particular production arrangements that are seen as forming the basis of economic survival and success. The informational base has to be widened to include perceptions of legitimacy and desert, and the specification of felt individual interests must take note of perception problems.

These issues would have to be faced, but we may begin with the neat format of the bargaining problem as a starting point.<sup>20</sup> In the simplest case, there are two persons with well-defined and clearly perceived interests in the form of two cardinal utility functions respectively. They can co-operate altogether. The outcome when they fail to co-operate has been variously denoted, and may be called 'the status quo position' or 'the breakdown position'. What happens if the co-operative proposals should break down is of obvious relevance to the choice of the collusive outcome, since the breakdown position affects the two persons' respective bargaining powers. Since each person's interests are reflected by an exact (and cardinal) utility function, the breakdown position in a two-person bargaining problem is a pair of utility numbers, and the various co-operative outcomes form also a set of pairs of utility numbers (all with cardinal properties).

If there were only one collusive possibility that is better for both than the breakdown position, then there would, of course, be no real

20. While the classic contributions to formulating the bargaining problem were those of Nash (1950, 1953), some interesting and important variations can be found in Braithwaite (1955), Luce and Raiffa (1957), Schelling (1960), Kalai and Smordinsky (1975), Harsanyi (1977), Roth (1979), Binmore (1980), Kaneko (1980), Shubik (1983), Dasgupta (1986), and Binmore and Dasgupta (1987), among others.

bargaining problem, since that unique collusive solution would be the only one to choose. The bargaining problem arises from the existence of many choosable collusive arrangements - each such arrangement being better for both persons than the breakdown position. If there is a collusive arrangement which - while better for both than the breakdown position - is worse for both (or worse for one and no better for the other) than some other feasible collusive arrangement, then the first collusive arrangement - 'dominated' as it is - is taken to be rejected straightaway.

Once the dominated arrangements have been weeded out, there remain possible collusive solutions that are ranked by the two in exactly opposite ways. If for person 1, arrangement x is better than y, then for person 2, arrangement y must be better than x. (If not, then x would have dominated y as an arrangement.) At this stage of the exercise the aspect of co-operation is all gone and there is only conflict. The choice between any two undominated collusive arrangements is, therefore, one of pure adversity. But at the same time each person knows that the choice between any such collusive arrangement and the breakdown position is a matter of co-operation since the former is better for both. It is this mixture of co-operative and conflicting aspects in the bargaining problem that makes the analysis of that problem potentially valuable in understanding household arrangements which, too, involve a mixture of this kind.<sup>21</sup>

What solution would emerge in the 'bargaining problem'? That depends on a variety of possible influences, including the bargaining power of the two sides. The problem can be resolved in many different ways. Nash confines the informational base of the solution to (1) the pairs of

21. The advantages and limitations of the 'bargaining problem' format in analysing household arrangements are discussed in Sen (1985c).

alternative feasible individual welfare levels, and (2) to the welfare levels at the breakdown point. More specifically, he suggests a particular solution that would maximise the product of the two persons' welfare gains compared with the breakdown position.<sup>22</sup> Others have suggested other solutions.<sup>23</sup>

The main drawback of the 'bargaining problem' format applied to gender divisions arises not so much from the nature of any particular 'solution', but from the formulation of the 'problem' itself. As was discussed earlier, the perception of interest is neither likely to be precise, nor unambiguous. There are two distinct issues here.

The first is the need to distinguish between the perception of interest (of the different parties) and some more objective notion of their respective well-being. As was argued in section 2 (see also Sen 1982a, 1985a), focusing on the 'capabilities' of a person - what he or she can do or can be - provides a direct approach to a person's well-being. While that format also has many problems (especially dealing with indexing of capabilities),<sup>24</sup> it has important theoretical advantages as well as much

22. Nash did not see his solution of the bargaining problem as a predictive exercise, and seems to have characterized it as a normative solution of this conflict. His method of choosing a solution took the form of postulating some axioms of reasonableness of a co-operative outcome, and these axioms together uniquely identified the product-maximization formula. But, interestingly enough, exactly the same solution as Nash's would be arrived at if the bargaining procedure followed a method analysed earlier by Zeuthen (1930), whereby the two parties would move from one proposed arrangement to another if and only if the percentage gain of the gainer from the move would be greater than the percentage loss of the loser.

23. See footnotes 18 and 20 above. Manser and Brown (1980) have used the outcome specified by Kalai and Smordinsky (1975).

24. Some of the technical problems are discussed in Sen (1985b).

practical convenience.<sup>25</sup> Especially in dealing with poor economies, there are great advantages in concentrating on such parameters as longevity, nutrition, health and avoidance of morbidity, educational achievements, etc., compared with focusing purely on subjective utility in the form of pleasure, satisfaction, desire fulfilment, which can be influenced by social conditioning and a resigned acceptance of misfortune.<sup>26</sup> The analyses of co-operative conflicts have, in this view, to go beyond perceived interests, and we have to distinguish between perceptions and well-being.

The second limitation arises from the informational base of bargaining models being confined to individual interests (or welfare) only, without letting the solution respond explicitly to other variables such as conceptions of desert and legitimacy (e.g., those related to perceived 'productive contributions' of each party to family opulence).<sup>27</sup> The nature of 'social technology' makes these ideas particularly influential in the determination of gender divisions. We need, on both these grounds, a wider informational base for studying cooperative conflicts.

##### 5. Cooperative conflicts: Interests, contributions and perceptions

The informational base of cooperative conflicts must distinguish

25. For some applications of the format in the specific context of women's position and relative disadvantage, see Kynch and Sen (1983), Sen and Sengupta (1983), Sen (1984: Essays 15 and 16), and Sen (1985b: Appendix B).
26. The capability to be happy can, of course, be sensibly included among the relevant capabilities, but this is quite different from using utility (or happiness) as the measure of all types of benefits, or (even more ambitiously) as the ultimate source of all value (as in different versions of the utilitarian approach).
27. The Nash bargaining models are, in his sense, 'welfarist', without being utilitarian.

between (i) interest perceptions, and (ii) measures of the well-being of the persons involved. Further, the base must include information regarding perceptions of who is 'contributing' how much to the overall family prosperity.<sup>28</sup> This greater plurality of the informational structure makes the modelling of cooperative outcomes that much more complex than in the simple special case of the bargaining problem in the tradition of Nash. But the simplicity of the Nash model and the related structures is achieved at considerable sacrifice of informational sensitivity.<sup>29</sup> In this presentation, I shall not try to develop a fully worked out solution function for the cooperative conflict problems. Indeed, a variety of solutions can be suggested, and all that will be done here is to specify a set of directional features, related respectively to (1) well-being levels at the breakdown points, (2) perceived interests, and (3) perceived contributions. For our present purpose this is adequate, though - obviously - any attempt at specifying an exact outcome would not be able to escape presenting a more complete solution structure.

One particular feature of the Nash bargaining problem has attracted - justifiably - a good deal of attention. This makes the outcome respond

28. The 'bargaining solution function' presented in Sen (1970), pp.126-7, can be readily extended for this purpose. In that characterisation of the Nash bargaining model, the solution  $\bar{x}$  depended on the breakdown position  $\underline{x}$  and on the welfare combination  $\underline{W}$ , with specified 'invariance conditions' corresponding to cardinal non-comparability of individual well-being. To these informational inputs (possibly with changed invariance conditions), we can add the perceived-interest combination  $\underline{I}$  and perceived-contribution combination  $\underline{P}$ , the latter unique (since the units will be so many units of, say, incomes generated by each) in the respective points of collusive solutions. The informational base for the solution will then be  $(\underline{x}, \underline{W}, \underline{I}, \underline{P})$ . In this elementary exposition, we are concerned only with some directional responses of  $\bar{x}$ , the solution, to the determining variables.
29. Schelling (1960) has pointed to the fact that the Nash solution pays no attention to the 'salience' of some outcomes vis-à-vis others. Schelling's alternative approach also enriches the informational base of the Nash model, but takes us in a different direction, which I shall not pursue here.

firmly to the nature of the breakdown position.<sup>30</sup> Indeed, a more favourable placing in the breakdown position would tend to help in securing a more favourable bargaining outcome. Nash had seen his solution as a normative one, and it has been argued in criticism of Nash that in that context this responsiveness to the breakdown position may not perhaps be so easy to defend.<sup>31</sup> But predictively it is, of course, entirely plausible that the fear of the breakdown position would tend to govern the bargaining process and strongly influence its outcome.

With a little more structure in the characterization of the bargaining problem than we have introduced so far, it is easy to get a directional relation of the following form:

- (1) Breakdown well-being response: Given other things, if the breakdown position of one person were worse in terms of well-being, then the collusive solution, if different, would be less favourable to his or her well-being.

The breakdown position gives the person vulnerability or strength in the 'bargaining'. If in the case of a breakdown, one of the persons is going to end up in more of a mess than it appeared previously, that is going to weaken that person's ability to secure a favourable outcome.

30. This is, in fact, obvious from the method - already described - of identifying the solution.
31. Punishing the more vulnerable is not unplausible from a predictive point of view, but it is odd to think of this as being "just", or otherwise normatively attractive, though that interpretation has been taken (see particularly Braithwaite 1955). To say 'I see you are going to be even worse off (than we first thought) if you do not join up with me, so you better agree to these worsened terms of joining', may not ring untrue (if a little explicit and crude), but it is hardly overflowing with anything that can plausibly be called justice. On the relation between the predictive and normative issues in the context of Nash's bargaining problem, see Sen (1970) and Rawls (1971).

The 'breakdown response' is a general qualitative property of co-operative conflicts entirely in line with the rationale of Nash's approach to bargaining. Others have extended the idea of bargaining power by bringing in the idea of 'threat', to wit, a person threatening the other with some harmful action if the bargaining were to fail. This can make the actual result of breakdown worse for the threatened person than the previously identified breakdown position, if the threat is carried out.<sup>32</sup>

This is a plausible direction of extension, though there are some very basic difficulties with any theory of threats, since it has to deal with situations after the bargaining has failed.<sup>33</sup> But in the context of a bargaining arrangement that continues over time, there are possibilities of going on making 'side threats' (and through them, trying to make the outcome more favourable in the process of living through it). The nature of 'repeated games' gives credibility to threats. I shall not pursue here this type of influence further (see, however, Sen 1985c).

The influence of perceived interest on the bargaining outcome may take the form of choosing a solution in the space not of individual well-being levels, but in that of perceived interests. In fact, a simple translation of the Nash model would be to redefine the solution in terms of these interest perceptions rather than well-being measures. If the breakdown point too is defined in terms of perceived interests, rather than actual

32. See Braithwaite (1955), Luce and Raiffa (1958), Schelling (1960), Harsanyi (1979), Roth (1979), Binmore and Dasgupta (1987).

33. See Sen (1970), pp. 120-1. The person who 'threatens' to harm the other if the bargaining should fail does it at no direct advantage to himself (otherwise it won't be a 'threat' but something he may do anyway, and will be thus reflected in the breakdown position). While it is plausible to try to get bargaining advantage out of a threat during the process of bargaining, once the bargaining has failed, the threatener has no obvious interest in carrying out the threat. But that recognition on the part of the threatened person would call into question the credibility of the threat itself.

well-being levels (unlike in 'breakdown well-being response'), then this will amount to a simple interpretational shift of the Nash model without necessarily changing the mathematical properties of the solution (but making a substantive difference to the actual solution since the perceived-interest relations may well be much less favourable to one party than the well-being relations, for reasons discussion in Section 2). In the plural informational format proposed here, both perceived interests and well-being measures may have influence, the latter especially through breakdown response.

The motivation underlying the directional response to be specified here relates to the fact that a person may get a worse deal in the collusive solution if his or her perceived interest takes little note of his or her own well-being. As was discussed earlier, such perception bias in the direction of the interests of the others in the family may apply particularly to women in traditional societies (see Section 2).

- (2) Perceived interest response: Given other things, if the self-interest perception of one of the persons were to attach less value to his or her own well-being, then the collusive solution, if different, be less favourable to that person, in terms of well-being.

A different type of issue is raised by the influence of a perceived sense of greater 'contribution' (and of the 'legitimacy' of enjoying a correspondingly bigger share of the fruits of co-operation). This question has already been discussed earlier. 'Perceived contributions' have to be distinguished from actual contributions. Indeed, the idea of who is actually producing precisely what in an integrated system may not be at all clear. Nevertheless the perceived contribution of people can be important

in tilting the co-operative outcomes in favour of the perceived contributor.

- (3) Perceived contribution response: Given other things, if in the accounting of the respective outcomes, a person were perceived as making a larger contribution to the over-all opulence of the group, then the collusive solution, if different, would be more favourable to that person.

The three 'responses', related respectively to breakdown, perceived interest and perceived contribution, may throw some light on the way the deal tends to be biased between the sexes. This can be seen both in terms of a stylized reference point of a 'primitive' situation as well as a more realistically portrayed 'current' one, and the relation between the two situations is itself of some interest. Some disadvantages of women would apply in both types of situations. For example, frequent pregnancy and persistent child-rearing (as happens in many present communities and has happened in most of the past ones) must make the outcome of co-operative conflicts less favourable to women through worse breakdown position and a lower ability to make a perceived contribution to the economic fortunes of the family.<sup>34</sup> Other disadvantages are much more specific to the nature of the community, e.g. greater illiteracy and less higher education of women in most developing - and some developed - countries today, and these too would tend to make the breakdown positions worse for women.

The perception biases unfavourable to women, both in terms of

34. On the importance of 'reproductive' role of women in influencing gender bias, are Bryceson (1985). Leela Gulati (1981) presents and interesting case study of astonishingly rapid impact of an extension of family planning in some fishing villages in Kerala on the health and survival of women and on their earning power.

reflecting well-being in perceived interests and recording productive contributions adequately, will also vary from one society to another. The 'perceived interest response' and the 'perceived contribution response' can be tremendously more effective in some societies than in others (see Ser 1984: Essays 15 and 16).

The relation between the co-operative conflicts in one period and that in the next is of the greatest importance even though it may be hard to formalize this properly. The 'winners' in one round get a satisfactory outcome that would typically include not only more immediate benefit but also a better placing (and greater bargaining power) in the future. This need not be the result of a conscious exercise of taking note of future placing or bargaining power (though it can also be that), but the effect may be brought about by the fact that 'more satisfactory work' from the point of view of immediate benefit also tends, incidentally, to enhance the power bases of the deal a person can expect to get in the future. For example, getting better education, being free to work outside the home, finding a more 'productive' employment, etc. may all contribute not only to immediate well-being, but also to acquired skill and a better breakdown position for the future.<sup>35</sup> Also job training improves the quality of labour, and improves one's breakdown position, threat advantages and perceived contributions within the family, even when these may not have been conscious objectives.

The transmission can also work from one generation to the next, indeed from one historical epoch to the next, as the 'typical' patterns of

35. Cf. Becker, Landes and Michael's (1977) characterization of 'working exclusively in the non-market sector' as a form of marriage-specific investment. As Pollak (1983) remarks, "a decision to work exclusively in the non-market sector, however, is also a decision not to acquire additional human capital by working in the market sector" (p.35).

employment and education for men get solidified vis-à-vis those for women. The asymmetries of immediate benefits sustain future asymmetries of future bases of sexual divisions, which in turn sustain asymmetries of immediate benefits. The process can feed on itself, and I shall refer to this process as 'feedback transmission'.<sup>36</sup>

In the stylized 'primitive' situation, the disadvantages of women in terms of 'breakdown response' would relate greatly to purely physical factors, even though the role of physical factors will be governed by social conditions. For example, at an advanced stage of pregnancy, securing food on one's own in a hunting community must be no mean task. The breakdown positions can be asymmetrically worse for women in various types of 'primitive' societies, and this can make the gender visions go relatively against women in line with 'breakdown response'.<sup>37</sup>

In a less primitive situation - stylized 'current' one - the primitive asymmetries, if any, are supplemented by socially generated further

- 36. If this were to be formalized, it will take the form of 'repeated games' with varying participants with distinguished intertemporal links.
- 37. Strictly speaking, 'breakdown response' is not concerned with the relative positions of two parties but with the different positions of the same person in two situations with different breakdown features. Indeed, in Nash's own formulation, the position of one person being worse than that of another is not a meaningful statement, since Nash had no provision for interpersonal comparison (on this see Sen 1970, pp.118-125). However, when such comparisons are admitted and a condition of symmetry is used regarding the relation between circumstances and outcomes for the two parties, the property of breakdown response can be easily translated from intrapersonal to interpersonal relations. The same translation has to be done for the other two 'responses' as well, to move from intrapersonal formulation to interpersonal application. I desist from pursuing the formalities here.

asymmetries, e.g., of ownership, education and training,<sup>38</sup> and also a nurtured view of the 'fragility' of women (seen as 'quite unsuitable' for some types of jobs). These all contribute to a worse breakdown position, and worse ability to make a 'perceived contribution' to the family's economic status. The bargaining disadvantages will feed on themselves through 'feedback transmission'. It may not be, then, terribly important to know how all this got started, i.e., whether because of the physical asymmetries relevant in the 'primitive' situation, or through some other process (e.g., as Engels 1884 had argued, through the emergence of private property). In the present context, the important point is that such asymmetries - however developed - are stable and sustained, and the relative weakness of women in co-operative conflict in one period tends to sustain relative weakness in the next.<sup>39</sup>

38. There is, in fact, some substantial common ground here with those neo-classical analyses of women's employment which have emphasized the differences in 'human capital' investment in women's working background to explain their lower wages, inferior jobs and worse unemployment risks (see, for example, Mincer and Polachek 1974 and Becker 1981; see also Apps 1981). That neo-classical literature has done a substantial service in emphasizing these differences related to sex. However, the nature of the analysis suffers from certain fundamental limitations, in particular: (1) taking the existence and realization of competitive market equilibrium for granted (with or without market institutions and competitive conditions), (2) ignoring the role of social prejudices and preconceptions operating in the labour market (going beyond the 'stochastically rational' employer behaviour pointed out by Phelps 1972), (3) dealing trivially with 'co-operative conflicts' implicit in household arrangements by concentrating either on an as if market solution or on the assumed dominance of an altruistic head, and ignoring in particular the role of perception biases and bargaining powers in explaining family decisions regarding human capital investment and the gender division of labour, and (4) related to the last point, ignoring the role of 'feedback transmission' in sustaining the gender asymmetry.
39. Regarding the role of 'threats', the physical asymmetry would be more important in the primitive situation, though it remains important enough even today, judging by the frequency of wife-battering, even in the richer countries. But physical asymmetries in the ability to threaten are also supplemented by nurtured asymmetries of social power. It is easy to under-estimate the importance of threat in the social arrangements (including those within the household) since much of it may be implicit rather than explicit and liberally mixed with other

(Continued on next page).

The impact of 'perceived contribution response' may have been primitively associated with acquiring food from outside. The fact that the division of labour within the household permits some members to play this role while others take care of other activities (including preparation of food and looking after children) may not weaken the perception of special importance of 'bringing the food home'. Ester Boserup (1970) has, rightly, taken Margaret Mead (1950) to task for the following overgeneralization: "the home shared by a man or men and female partners, into which men bring the food and women prepare it, is the basic common picture the world over".<sup>40</sup> But it is nevertheless a common enough picture in many primitive (and modern) societies, and may well have contributed a further force in the direction of gender asymmetry of consumption and sustenance.

Ester Boserup has noted that women appear to fare relatively better in those societies in which women play the major role in acquiring food from outside, e.g. in some African regions with shifting cultivation (Boserup 1970, chapter 1; see also Boserup 1986). The role of outside earning does seem to be a strong one in creating a difference within the family. It has been noted that in India in the regions in which women do little outside earning (e.g. Punjab and

39. [continued from previous page]... features of household relations, including love, affection and concern. But threat can in some cases be explicit enough, both as a phenomenon in itself and in the transparent role it can play in maintaining a particularly inequitable household arrangement. (See for example Kurian, 1982, dealing with the role of violence and social power asymmetries in the plantation sector of Sri Lanka, helping to sustain a particularly inequitable situation for women workers.) It becomes, of course, the subject of much discussion when the violence or threat is associated with other features that arouse social interest, e.g., the peculiar relationship between pimps and prostitutes in which threat often plays an important part in securing a regular pay-off for the former from the earnings of the latter (see, for example, Phongpaichit 1982).

40. Mead (1950), p.190; Boserup (1970), p.16. See also Dasgupta (1977) and Slocum (1975), who also go into 'the male bias in anthropology'.

Haryana) sex disparities are sharper - visible even in the discriminated treatment of female children - than in regions where they have a bigger role in earning from outside (e.g. in Southern India).<sup>41</sup> As was noted earlier, even the crude indicator of sex ratio (female per male) is as low as 0.87 and 0.88 in Haryana and Punjab respectively in contrast with the Southern Indian states (0.96 in Karnataka, 0.98 in Andhra Pradesh and Tamil Nadu and 1.03 in Kerala).

The nature of 'perceived contribution' to family opulence has to be distinguished from the amount of time expended in working inside and outside the home. Indeed, in terms of 'time allocation studies', women often seem to do astonishingly large amounts of work even when the so-called 'economic' contribution is perceived to be relatively modest (see, for example Batliwala 1981; Jain and Chand 1982; Mukhopadhyaya 1982; Jain and Banerjee 1985). The perception bias tends to relate to the size of the direct money earning, rather than to the amount of time and effort expended (or to the role of non-market activities by other members of the family, who indirectly support such earnings).

#### 6. Extended entitlements and perceived legitimacy

In a series of earlier studies dealing specifically with starvation and famines, I have tried to analyse the problem of command over goods and services (including food) in terms of 'entitlement systems' (Sen 1976, 1977a, 1981). The analysis concentrated on the command that the household can exercise over goods and services, and it did not take on the issue of distribution within the household. Entitlement is essentially a legal concept, dealing with rules that govern who can have the use of what. Since the distribution within the household is not typically controlled by law (as property ownership and market transactions are), there are obvious

difficulties in extending the entitlement analysis to the problem of intrahousehold distribution.

But the distributions of food, health care, education, etc., are of obvious importance in determining each person's actual command over necessities, and this is often a source of inequality. In some empirical studies relating to India and Bangladesh (e.g. Sen 1982b, 1984: Essay 15;, Kynch and Sen 1983; Sen and Sengupta, 1982), a pattern of sex bias in nutritional achievements, health care and medical attention (and in morbidity and mortality rates) has come through strikingly.<sup>42</sup> Such systematic differences have also been observed in other parts of the developing world.<sup>43</sup>

There is also some evidence that deep-seated notions of 'legitimacy' operate in the distribution within the family (see Sen 1982b, 1983b), supplementing the operations of entitlement relations at the levels of households, occupation groups and classes. There is, thus, a good case for extending the entitlement analysis to intrahousehold distribution as well, taking a broad view of accepted legitimacy (rather than just of 'laws' in the strict sense). Such an extension will closely relate to the structure

41. See P. Bardhan (1974, 1984, 1987), Miller (1981), Dyson and Moore (1983), Kynch and Sen (1983), Sen and Sengupta (1983), K. Bardhan (1985), G. Sen (1985). The contrast between Eastern and Southeast Asia and South Asia may also relate to greater female participation in outside work in the former region. See Dixon (1983), Sen (1984: Essay 16). On some more general but related issues, see also Chakravarty (1986) and Tilly (1986).

42. See also Wyon and Gordon (1971), Mitra (1980), Natarajan (undated), Chen, Huq and D'Souza (1981), Chan (1982), Hassan and Ahmad (1984), Bhuiya et al (1986), Das Gupta (1987). However, for some contrary considerations, see also Wheeler (1984), Kakwani (1986), Basu (1987), n (1982), Dyson (1987). Barbara Harriss (1987) has presented an extensive and illuminating survey of the available evidence on different sides.

43. See, for example, den Hartog (1973) and Schofield (1975). See also Vaughan (1985, 1987) and Whitehead (1985).

of gender divisions with which the earlier parts of this paper have been concerned.

In a private ownership economy, the two basic parameters of entitlement analysis are 'endowment' (roughly, what is initially owned) and 'exchange entitlement mapping' (reflecting the exchange possibilities that exist through production and trade).<sup>44</sup> The person (or the household) can establish command over any bundle of commodities that can be obtained by using the endowment and the exchange entitlement mapping, reflecting both possibilities and the terms of trade and production. The set of all commodity bundles over any one of which the person (or the household) can establish command is his or her (or its) 'entitlement set'. If the entitlement set does not include any bundle with enough food, then the person (or the household) must starve. With this very general structure much of the analysis was devoted to studying patterns of endowment and exchange entitlement mappings, paying particular attention to modes of production, class structure, roles of occupation groups, and market forces.

The analysis was also used to study a number of modern famines, in some of which (e.g. the Bengal famine of 1943, the Ethiopian famines of 1973, the Bangladesh famine of 1974) the total availability of food per head turned out to have been no less (sometimes more) than in previous years. The famines were shown to be the results of entitlement failures related either to endowment decline (e.g. alienation of land, or loss of grazing rights), or exchange entitlement decline (e.g., loss of employment, failure of money wages to keep up with food prices, failure of prices of animal

<sup>44</sup>. For a fuller presentation of the entitlement approach and its application, see Sen (1981). See also Alamgir (1980), Arrow (1982), Oughton (1982), Desai (1984), Solow (1984), Appadorai (1985), Khan (1985), Ravallion (1985, 1987), Snowdon (1985), Tilly (1985, 1986), Vaughan (1985, 1987), Devereux and Hay (1986), Kamsler (1986).

products or craft products or services to keep up with the prices of basic food), or both. The famines decimated specific occupation groups, while leaving other occupation groups and classes unaffected, sometimes enriched.<sup>45</sup>

For for most of humanity, virtually the only significant endowment is labour power. Much of the analysis, thus, turned on the conditions and governing the exchange of labour power (e.g. employment, wages <sup>A</sup> prices, etc., and social security, if any). It was also found that the right to the use of land, even without ownership, e.g. secured share-cropping rights, makes a big difference to famine-vulnerability. In fact, in the South Asian context, while landless rural labourers constitute the occupation group most vulnerable to famine, nevertheless sharecroppers (who are, in normal circumstances, not much richer than labourers) turn out to be often much less vulnerable to famines than labourers (Sen 1981). The difference relates largely to the fact that the share-cropper gets directly a share of the food crop (without having to depend on the market), whereas the rural labourer faces the dual threat of unemployment and possible inadequacy of wages to buy enough food at the relative prices that would happen to emerge. The fact that daily wage labourers often form a much <sup>of</sup> higher proportion of female agricultural workers than <sup>A</sup> males (see Dixon 1983, G. Sen 1983, Agarwal 1986, among others) is, thus, of some importance.

Turning now to the intrahousehold distribution of food in famine situations, the empirical evidence seems to suggest conflicting stories. The famine experts of the British Raj in India were on the whole persuaded

45. See Sen (1976, 1977a, 1981). See also Griffin (1978), Ghose (1979), Alamgir (1980), Oughton (1982), Khan (1985), Ravallion (1985, 1987), Snowdon (1985), Vaughan (1985), among others, for other case studies and related analyses.

that men died in much larger numbers than women in Indian famines,<sup>46</sup> but the evidence might possibly have been based on biases in data collection.<sup>47</sup> There has been no serious famine in India since independence, but there have been many situations of hardship in acquiring food, not altogether relieved (though typically much reduced) by government intervention. There is some considerable evidence of bias against the female, especially the female child vis-à-vis the male child, in such situations of hardship (see Sen 1984: Essay 15). And in normal mortality too, there is clear evidence of female disadvantage in age groups below 35. This is especially striking for children.<sup>48</sup> One remarkable feature of Indian demography is a significant decline in the sex ratio (female to male) in the Indian population, from 0.972 in 1901 (quite low even then) to 0.935 in 1981. This feature relates to many other ways in which the continued – and in some ways increasing – relative deprivation of Indian women come through

46. See Census of India 1911, vol. I, part I, Appendix to chapter VI, surveying the nineteenth century famine inquiry reports, well reflected by Sir Charles Elliot's summary: 'all the authorities seem agreed that women succumb to famine less easily than men'.

47. An excess of male deaths was reported also in the Bengal famine of 1943 by Das (1949), based on a survey asking people receiving cooked food relief, who of their relations had died. However more complete data do not seem to support Das's survey finding and indicate that the sex ratio of famine mortality in 1943 was much the same as the sex ratio of normal mortality in Bengal (see Sen, 1981, pp.211-3). Among the relief receivers (the population that was questioned), there seems to have been a higher proportion of women (famine relief policy was more suspicious of supporting able-bodied men), and this bias in favour of women in the questioned population would have acted as a bias in favour of men being reported as dead in the survey. A woman has typically more male relatives in the nuclear family (including her husband) than female relatives, and thus she has a higher probability of having a dead male relative. Similar biases in sampling could have affected the nineteenth century belief in greater famine deaths among men. But the evidence requires a more thorough examination than it has received so far.

48. See P. Bardhan (1974, 1984, 1987), Natarajan (undated), Mitra (1980), Sopher (1980), Miller (1981), Dyson (1982, 1987), Padmanabha (1982), Kynch and Sen (1983), K. Bardhan (1985). On related observations regarding Bangladesh, see Chan, Huq and D'Souza (1981), Chen (1982), Mahmud and Mahmud (1985).

(see Kynch and Sen 1983). The problem is present in many other countries as well, and as was mentioned earlier, the female-male ratio is very substantially lower than unity in Asia as a whole.

In extending the entitlement analysis to include intra-household distribution, attention must be paid to the fact that the relationships within the household in the distribution of food and other goods cannot sensibly be seen in the same way as the relationships of persons and households to others outside the household, e.g. an employer, a trader, a landowner, a retailer, a speculator. That is why a straightforward translation of the entitlement analysis presented earlier would be a mistake, tempting though it might be. To indulge in technicalities for a moment, it is best to see entitlements not as a set of vectors (bundles of commodities going to the household as a whole), but as a set of matrices (bundles of commodities for each members of the household), with each person's share being given by a column of the matrix. Similarly, endowments too are best seen as matrices (bundles of ownership for each member), even though the children may typically enter with zeroes everywhere, and more importantly, most of the adults too would have nothing other than their labour-power to adorn the household endowment matrix. Women in particular will tend<sup>A</sup> frequently to fall in that category (outside a small class). The exchange entitlement mapping will then specify for each endowment matrix the set of possible commodity matrices. Starvation will occur if - given the endowment matrix - none of the possible commodity matrices includes adequate food for each person. It can also occur even if there is a feasible matrix with adequate food for all, if that feasible matrix does not emerge in the choice process.

This is not the occasion to launch forth into the technical analysis that will clearly be needed for some purposes, nor indeed to go into detail

in the way ownership patterns, production possibilities and market arrangements (including that for labour power) interact to constrain the exchange entitlement mappings. Some of that analysis can draw heavily on the entitlement relations explored earlier (Sen 1981) at the interhousehold level, but the supplementation needed must capture the essentials of the sexual divisions, including intrahousehold distributions. If the intrahousehold distribution patterns are taken as completely flexible, then the possible matrices would reflect that freedom through listing all possible intrahousehold distributions of the same household bundle. At the other extreme, if the head of the household has very fixed ideas of how the bundle must be distributed and has the power to carry out his (patriarchial) decisions, then each household commodity bundle would translate into exactly one household matrix of who would have which good.<sup>49</sup> The actual situation would vary between these limits.

The general issues underlying the formulation of the household arrangement problem as a 'bargaining problem' can now be used to characterize some features of the extended exchange entitlement mapping. For example, 'breakdown response' will be reflected in the individual consumption of the person (his or her 'column') being more favourable in the possible entitlement matrices, given other things, as the person's fall-back position improves. Similarly, the column of each person would be influenced by perceived interests and perceived contributions in the ways

49. The approach of 'equivalence scales' based on the assumption of maximization of a unique utility function for the family as a whole, which is technically perhaps the most impressive part of the literature in intrafamily allocation (see Deaton and Muellbauer 1980), is implicitly based on some assumption of this kind, e.g. the 'head' of the family imposing a benevolent preference ordering in making decisions about everyone's consumption in the family. When the 'head' has a strictly convex preference map, each household entitlement vector would be translated into a unique household entitlement matrix. There are, however, other ways of interpreting the outcome of intra-family divisions; see Deaton (1987) and Muellbauer (1987).

specified by the respective 'responses'.<sup>50</sup>

#### 7. Production, earnings and perceived contributions

A woman's opportunity to get 'gainful' work outside is one of the crucial variables affecting the extended exchange entitlement mapping. This can happen in two distinct ways, corresponding respectively to the 'co-operative' and 'conflicting' features discussed earlier in the 'co-operative conflict' formulation of sexual divisions. First, such employment would enhance the over-all command of the household, i.e. the family entitlement. Second, for a given family entitlement, the woman's relative share may also respond positively to her outside earnings. This latter influence corresponds, of course, to the element of pure conflict in 'co-operative conflicts', and the directional link described here would reflect some combination of the three responses discussed earlier. Outside earnings can give the woman in question: (1) a better breakdown position, (2) possibly a clearer perception of her individuality and well-being, and (3) a higher 'perceived contribution' to the family's economic position.

The empirical basis of the directional link has been supported in a number of studies dealing with women's work, following the pioneering contribution Ester Boserup (1970). To quote just one example, in her definitive study of the women workers in the beedi (crude cigarette) industry in Allahabad in India, Zarina Bhatty (1980) found the following:

50. It is not difficult to extend the mathematical formulation of the vector-vector 'exchange entitlement mapping' (see Appendix A in Sen 1981) into this expanded format of matrix-matrix 'extended exchange entitlement mapping', and to specify the 'responses' in question as a set of 'monotonicity conditions'. To be exact, the 'extended' exchange entitlement mapping relates a matrix of family endowment to a set of matrices of family entitlements, just as the standard exchange entitlement mapping relates a vector of family endowment to a set of vectors of family entitlements. The monotonicity conditions would be defined in that format.

"A greater economic role for women definitely improves their status within the family. A majority of them have more money to spend, and even more importantly, have a greater say in the decisions to spend money. Most women claim to be better treated as a result of their contribution to household income.... A substantial proportion of women feel that they should have a recognized economic role and an independent source of income.... Their attitudes evidence a clear perception of the significance of their work to family welfare and their own status within the family".  
 (p.41)<sup>51</sup>

The impact of outside earning of women depends also on the form of that earning. In her well-known study of the lace makers of Narsapur in India, Maria Mies (1982) notes that these women workers do not get much benefit from their work, because despite the fact that the products are sold in the world market, the women "are recruited as housewives to produce lace as a so-called spare-time activity, in their own homes" (p.172). "As she herself is not able to see her work as a value-producing work, she subscribes to the devaluation of this work as non-work, as purely supplementary to her husband's work, and she is not able to bargain for a just wage. This mystification is the basis of her over-exploitation as housewife and as worker" (pp.173-4). The lower bargaining power of the women workers vis-à-vis the employers depresses the exchange entitlement of the household as a whole. Further, the weakness of the three 'responses'

51. See also Beneria (1982), Croll (1979), Deere and de Leal (1982), ILO (1982a), Loutfi (1980), Mies (1982), Phongpaichit (1982), Jain and Banerjee (1985), Mahmud and Mahmud (1985). Also Standing and Sheehan (1978). Lloyd and Niemi (1979) deal with a related problem in the context of rich and economically advanced countries.

for women workers vis-à-vis the rest of the family further affects the extended exchange entitlement by depressing their status and the share of benefits that go to them within the household.

The extension of entitlement analysis to divisions within the family brings in notions of legitimacy that go well beyond the system of State-enforced laws on which property relations, market transactions, wage employment, etc., operate and on which the standard entitlement analysis depends. But these notions of legitimacy have a firm social basis and may be hard to displace. What would have looked, in the format of the 'bargaining problem', like a might-is-right bargaining outcome (e.g. giving a worse deal to the person with a weaker breakdown position) may, actually, take the form of appearing to be the 'natural' and 'legitimate' outcome in the perception of all the parties involved. The idea of entitlement in the extended form can be influenced by a shared sense of legitimacy (however inequitous it might be) and adapted perceptions that relate to it.

The care that female children receive vis-à-vis male children (in terms of nutrition, medical attention etc.) may also be positively influenced by the size of outside earnings of women vis-à-vis men. The neglect of female children and the preference for having male ones in India, especially in and especially of second and later daughters the North<sup>A</sup>(see Miller 1981, Das Gupta 1987) may well be related to lower earnings powers of women and thus lower 'returns' in rearing girls vis-à-vis boys, and this may be an important influence on family behaviours of the less well-off rural population (see Rosenzweig and Schultz 1982 and Behrman 1986).

The influence of outside earnings and the so-called productive activities of women for their extended entitlements can also be studied in terms of interregional contrasts. In her pioneering study of women's

issues in economic development, Ester Boserup (1970) has drawn attention to the contrast between Africa and Asia in terms of women's outside employment and its effects (pp.24-5). The greater female participation of rural women in Africa than in Asia is brought out also by some inter-country statistics presented by Ruth Dixon (1983). In fact, as Boserup noted, there are considerable contrasts within Africa itself in terms of female participation.

The big regional contrast within Africa relates in fact to the participation rates in Northern Africa vis-à-vis those in the rest of the continent. An aggregative picture of interregional contrasts within Africa and Asia is presented in Table 1 with comparative data for five major regions: Northern Africa, Non-Northern Africa, West Asia, South Asia and Eastern and South-eastern Asia. 'Activity rate ratios' (females to males) for each of these regions have been calculated by aggregating data for all countries covered by the ILO (1986) in the respective regions. The female-male life expectancy ratios for the same regions are also given in the same table, calculated from the country statistics presented in the United Nations' tapes on 'Estimates and Projections of Population' (United Nations 1985).<sup>52</sup>

52. Note that China has not been included in this comparative picture. In fact, the female-male activity rate ratio has gone up sharply in China in recent years (especially for the lower age groups). But, while the female-male life expectancy ratio has also gone up substantially, China's relative rank in the latter is still rather low.

Table 1

<u>Regions</u>	<u>Activity-rate ratios 1980</u> (female-male)		<u>Life expectancy ratios 1980</u> (female-male)	
	Values	Ranks	Values	Ranks
Non-Northern Africa	0.645	1	1.071	1
Eastern & South				
Eastern Asia	0.610	2	1.066	2
Western Asia	0.373	3	1.052	3
Southern Asia	0.336	4	0.989	5
Northern Africa	0.158	5	1.050	4

Source: Sen (1986b), calculated from country date given in ILO (1986) and United Nations (1985). I am grateful to Jocelyn Kynch for her research assistance in preparing these aggregative tables. The activity rate ratios represent the proportions of total population of each sex engaged in so-called 'economic' (or 'gainful') activities.

As was discussed earlier, the regional contrasts within India, e.g., that between South and North India, also seem to suggest a similar influence of female 'activity' rate ratios on the deal that rural women receive vis-à-vis men.<sup>53</sup> The possible routes of influence (though breakdown response, perceived interest response, and perceived contribution response) have already been discussed in the analysis presented earlier.

It is interesting that the ranking of life expectancy ratios (female-male) is very similar to that of activity rate ratios (female-male). While no definitive conclusion can be drawn from these data alone, insofar as anything does emerge from them, it would seem to support and corroborate the conclusions drawn from micro studies and general economic reasoning, which also point in the direction of positively relating female 'productive' activity to a better deal (and enhanced extended entitlement for women). The contrasts between Southern Asia and Non-Northern Africa, and those between Southern Asia and Eastern and South-Eastern Asia, and between Northern and Non-Northern Africa, are

53. See particularly Bardhan (1974, 1984, 1987), Miller (1981, 1982).

particularly striking in view of the variety of evidence on greater female involvement in outside work in Northern Africa and Eastern and South-eastern Asia vis-à-vis North Africa and South Asia.

8. Well-being, agency and cooperative conflicts.

In this paper I have tried to present some elementary relations that might be of relevance in discussing women's issues in economic development. Conflicts of interest between men and women are very unlike other conflicts, such as class conflicts. A worker and a capitalist do not typically live together under the same roof - sharing concerns and experiences and acting jointly. This aspect of 'togetherness' gives the gender conflict some very special characteristics.

One of these characteristics is that many aspects of the conflict of interest between men and women have to be viewed against the background of pervasive cooperative behaviour. Not only do the different parties have much to gain from cooperation, their individual activities have to take the form of being overtly cooperative, even when substantial conflicts exist. This is seen most clearly in the parts of the gender divisions that relate to household arrangements, in particular who does what type of work in the household and enjoys what benefits. While serious conflicts of interests may, in the choice of 'social technology' (section 3), be involved, the nature of the family organization requires that these conflicts be moulded in a general format of cooperation, with conflicts treated as aberrations or deviant behaviour.

The cooperative format makes it particularly important to pay attention to perception problems about respective interests, contributions and claims (section 2). In analysing cooperative conflicts, we had difficulty in

following the leads provided by seeing household economics in terms of harmonious 'optimal' divisions (Samuelson 1956), or in terms of 'as if' competitive markets (Becker 1973-74), or in terms of 'altruism and voluntary contributions' in line with 'a group preference function' which is 'identical to that of the altruistic head' (Becker 1981). Even though formulations of household economics in terms of 'bargaining problems' (Manser and Brown 1980, McElroy and Horney 1981) succeed in catching one aspect of cooperative conflicts well, it misses many others because of the limited informational base of that game structure, neglecting in particular issues of perception in assessing interests and well-being and in evaluating contributions and claims (section 4).

The alternative line of analysis pursued in this paper takes the form of specifying important parts of the relevant informational base rather than that of pinpointing one exact 'solution' of the divisional problem. The analysis presented focused on a few 'responses' of outcomes to the identified informational base, dealing specifically with the influences of (1) the respective well-being levels in the case of breakdown of cooperation (a feature taken over from the Nash 1950 formulation of 'bargaining problem'), (2) the perception (including illusions) about personal interests in a family setting, and (3) the perception of 'contributions' made respectively by different members and the 'claims' arising from these contributions. These qualitative, rather than quantitative, relations help to establish some directional structure in relating social and personal parameters to divisional outcomes (section 5) and to notions of 'extended entitlements' including intrahousehold divisions (section 6). The correspondence of these directional structures to empirical observations of variations in gender divisions was discussed in terms of micro studies as well as aggregative regional contrasts (sections 5 - 7).

One of the parameters that seemed particularly important to pursue is the involvement of women in so-called 'productive' activities and in earning from outside (section 7). These activities are, of course, of obvious importance for female-headed households without adult men (Visaria and Visaria 1985), but they are of importance also when there are both adult men and women in the family. In addition to adding to the over-all affluence of the family, these activities also influence the relative shares by affecting the 'breakdown positions' of women and also the perceptions of women's 'contributions' and 'claims'. The relative 'returns' from rearing boys vis-à-vis girls, which have been found to be of some importance in the neglect of female children in some developing countries (see particularly Rosenzweig and Schultz 1982 and Behrman 1986), are also correspondingly influenced by variations in female 'activity rates' and 'outside earnings'. The explanation of the observed relations may involve not merely hard-headed individual calculations of relative returns from rearing boys vis-à-vis girls, but also the social influence of general prevalence of female activity and earnings on the common perception of 'contributions' made by women and of women's entitlements to a better share of the household's joint benefits (sections 5 - 7).

Even the perception of individual interests of women, which - it has been observed - tends to be merged with the notion of family well-being in some traditional cultures (section 2), may be sharpened by greater involvement of women with the outside world, and this may have important implications for household divisions. A preliminary examination of interregional variations of relative activity rates (female-male) and life expectancy ratios (female-male) provided some corroboration of what was expected on general theoretical grounds in terms of the directional responses of cooperative conflicts (section 7), but the empirical picture is far too complex to be summarised in the form of a simple model of

quantified cause-effect relationships.

One of the central issues that need more examination is the question of women's 'agency' as opposed to their 'well-being' (a distinction that was pursued in Sen 1985a and discussed in section 2 above). Neither the well-being nor the agency of women coincide with the utilitarian (or welfarist) mental metrics of happiness or desire fulfilment (though there are obvious connections). Well-being may be best analysed in terms of a person's 'functionings' and the 'capability' to achieve these functionings (i.e., what the person can do or can be), involving evaluation of the different capabilities in terms of the person's ability to live well and to achieve well-being. But a person is not necessarily concerned only with his or her own well-being and there are other objectives a person may pursue (or value pursuing if he or she had the opportunity to think freely and act freely). Our actual agency role is often overshadowed by social rules and by conventional perceptions of legitimacy. In the case of gender divisions, these conventions often act as barriers to seeking a more equitable deal, and sometimes militate even against recognizing the spectacular lack of equity in the ruling arrangements (sections 2 and 3).

In the analysis presented in this paper, the importance of perception and agency emerge as being quite central to achieving a better basis for female well-being in many parts of the world. In the recent development literature there is, happily, a growing awareness of inequities in gender divisions and of the neglect of women's well-being. But there is also a danger in seeing a woman, in this context, as a 'patient' rather than as an 'agent'. The political agency of women may be particularly important in encountering the pervasive perception biases that contribute to the neglect of women's needs and claims.<sup>54</sup> In addition to that, even the economic

54. See Jayawardena (1986).

agency of women has an important role in enhancing visibility of women's contributions to social living - a view that is obscured by the conventional form of 'social technology'. Even the particular influence of women's activity rates and outside earnings, which was discussed in terms of interregional correspondences in Africa and Asia (section 7), is an example of the instrumental role of agency in influencing gender division, and through that, the well-being - and survival - of women.

The importance of the links between perceptions, well-being and agency is among the central themes of this paper. The analysis of cooperative conflicts in gender divisions calls for a better understanding of these links. The narrow informational bases of traditional household economics can do with some substantial broadening. The study of women's issues in development can also benefit from informational diversification. The broad coverage of the needed informational base is not really surprising. After all, the subject matter includes some of the central issues of contemporary human existence.

REFERENCES

- Agarwal, B. (1981). "Agricultural Modernisation and Third World Women: Pointers from the Literature and an Empirical Analysis", ILO Working Paper.
- Agarwal, B. (1986). "Women, Poverty and Agricultural Growth in India", Journal of Peasant Studies, 13.
- Ahmed, I. (1978). "Technological Change and the Condition of Rural Women: A Preliminary Assessment", ILO Working Paper.
- Ahmed, I. (1983). "Technology and Rural Women in the Third World", International Labour Review, 122.
- Ahmed, Z.M. and Loutfi, M. (1982). "Women Workers in Rural Development: A Programme of the ILO", ILO Working Paper.
- Ahooja-Patel, K., ed. (1980), Women at Work, Nos. 1 and 2, Geneva: ILO.
- Alamgir, M. (1980). Famine in South Asia - Political Economy of Mass Starvation in Bangladesh (Cambridge, Mass.: Oelgeschlager, Gunn and Hain).
- Appadorai, A. (1984). "How Moral Is South Asia's Economy: A Review Article", Journal of Asian Studies, 43.
- Apps, P. (1981). A Theory of Inequality and Taxation (Cambridge: Cambridge University Press).
- Amsden, A.H. (1980), ed. The Economics of Women and Work (Harmondsworth: Penguin).
- Arrow, K.J. (1982). "Why People Go Hungry", New York Review of Books, 29, 15 July.
- Banerjee, N. (1979). "Women in Urban Labour Market", Labour, Capital and Society, 12.
- Banerjee, N. (1982). Unorganised Women Workers: The Calcutta Experience (Calcutta: Centre for Studies in Social Sciences).
- Banerjee, N. (1983). "Indian Women and the Urban Labour Market", mimeographed, Centre for Studies in Social Sciences, Calcutta.
- Banerjee, N. (1985). "Women's Work and Discrimination", in Jain and Banerjee (1985).
- Bardhan, K. (1985). "Women's Work, Welfare and Status", Economic and Political Weekly, 20 (December 21-28).
- Bardhan, P. (1974). "On Life and Death Questions", Economic and Political Weekly, 9, Special Number.
- Bardhan, P. (1984). Land, Labour and Rural Poverty: Essays in Development Economics (New York: Columbia University Press).
- Bardhan, P. (1987). "On the Economic Geography of Sex Disparity in Child Survival in India: A Note", mimeographed, University of California at Berkeley.

- Basu, A.M. (1987). "Is Discrimination in Food Really Necessary for Explaining Sex Differential in Childhood Mortality?" mimeographed, National Council of Applied Economic Research.
- Basu, A., et al (1986). "Sex Bias in Intrahousehold Food Distribution: Roles of Ethnic and Socioeconomic characteristics": Current Anthropology, 27.
- Batliwala, S. (1985). "Women in Poverty: The Energy, Health and Nutrition Syndrome; in Jain and Banerjee (1985).
- Becker, G.S. (1965). "A Theory of the Allocation of Time", Economic Journal, 75; reprinted in Amsden (1980).
- Becker, G.S. (1973-74). "A Theory of Marriage", Journal of Political Economy, "Part I", 81 and "Part II", 82.
- Becker, G.S. (1981). A Treatise on the Family (Cambridge, Mass.: Harvard University Press).
- Becker, G.S., Landes E.M., and Michael, R.T. (1977). "An Economic Analysis of Marital Instability", Journal of Political Economy, 85.
- Behrman, J. (1986). "Intrahousehold Allocation of Nutrients in Rural India: Are Boys Favoured? Do Parents Exhibit Inequality Aversion?" mimeographed, forthcoming in Oxford Economic Papers.
- Behrman, J. (1987). "Intrahousehold Allocation of Nutrients and Gender Effects" mimeographed, WIDER.
- Behrman, J., Pollak, R., and Taubman, P. (1982). "Parental Preferences and Provisions for Progeny", Journal of Political Economy, 90.
- Beneria, L., ed. (1982), Women and Development: The Sexual Division of Labour in Rural Societies. New York: Praeger.
- Benston, M. (1969). "The Political Economy of Women's Liberation, Monthly Review, September.
- Berk, R.A., and Berk, S.F. (1978). "A Simultaneous Equation Model for the Division of Household Labour", Sociological Methods and Research, 6.
- Bhalla, A. (1975), ed. Technology and Employment in Industry: A Case Study Approach. (Geneva: ILO.)
- Bhatty, Z. (1980). "Economic Role and Status of Women: A Case Study of Women in the Beedi Industry in Allahabad", ILO Working Paper.
- Bhuiya, A., et al (1986). "Socioeconomic Determinants of Child's Nutritional Status: Boys versus Girls", Food and Nutrition Bulletin, 8.
- Binmore, K. (1980). "Nash Bargaining Theory", mimeographed, London School of Economics. Revised version included in Binmore and Dasgupta (1987).
- Binmore, K., and Dasgupta, P., eds., (1987). The Economics of Bargaining (Oxford: Blackwell).
- Boserup, E. (1970). Women's Role in Economic Development, (London: Allen & Unwin).
- Boserup, E. (1986). "Economic Change and the Role of Women", mimeographed.

- Braithwaite, R. B. (1955). Theory of Games as a Tool for the Moral Philosopher (Cambridge: Cambridge University Press).
- Brown, M., and Chuang, C.F. (1980). "Intrahousehold Power and Demand for Shared Goods", Mimeographed, SUNY, Buffalo, N.Y.
- Bryceson, D.F. (1985). Women and Technology in Developing Countries (Santo Domingo: United Nations).
- Burman, S., ed. (1979), Fit Work for Women (London: Croom Helm).
- Carr, M. (1978). Appropriate Technology for African Women (Addis Ababa: United Nations).
- Chakravarty, L. (1986). "Poverty Studies in the Context of Agricultural Growth and Demographic Pressure: Case of Post-Independent India", mimeographed, Indraprastha College, Delhi University, Delhi.
- Chen, L.C. (1982) "Where Have the Women Gone?" Economic and Political Weekly, 17 (March).
- Chen, L.C., Huq, E., and D'Souza, S. (1981). "Sex Bias in the Family Allocation of Food and Health Care in Rural Bangladesh", Population and Development Review, 7.
- Clemhout, A. (1979). "A Life-Cycle Theory of Marriage and Divorce: A Pareto-Optimal Differential Game Model", in P. Liu and J. F. Sutinen, eds. Control Theory in Mathematical Economics (New York: Marcel Dekker).
- Clemhout, S., and Wan, Jr., H.Y. (1977). "Symmetric Marriage, Household Decision Making and Impact on Fertility", Working Paper 152, Cornell University.
- Croll, E. (1979). Women in Rural Development: The People's Republic of China (Geneva: ILO).
- Dalla Costa, M. (1972). "Women and the Subversion of the Community", in The Power of Women and the Subversion of the Community, (Falling Wall Press).
- Das, T. (1949). Bengal Famine (1943) (Calcutta: University of Calcutta).
- Das, V., and Nicholas, R. (1981). "'Welfare' and 'Well-being' in South Asian Societies", ACLS-SSRC Joint Committee on South Asia (New York: SSRC).
- Das Gupta, M. (1987). "Selective Discrimination against Female Children in Rural Punjab, India", Population and Development Review, 13.
- Dasgupta, B. (1977). Village Society and Labour Use (Delhi: OUP).
- Dasgupta, P. (1986). "Trust as a Commodity", in Gambetta (1987).
- Date-Bah, E., and Stevens, Y. (1981). "Rural Women in Africa and Technological Change: Some Issues", Labour and Society, 6.
- Deaton, A. (1987). "The Allocation of Goods within the Household: Adults, Children and Gender", mimeographed, Princeton University.

- Deaton, A., and Muellbauer, J. (1980). Economics and Consumer Behaviour (Cambridge: CUP).
- Deere, C.D., and de Leal, M.L. (1982). Women in Andean Agriculture (Geneva: ILO).
- Den Hartog, A.P. (1973). "Unequal Distribution of Food within the Household", FAO Newsletter, 10, 4 (October-December).
- Desai, M.J. (1984). "A General Theory of Poverty", Indian Economic Review.
- Devereux, S., and Hay, R. (1986). "The Origins of Famine", mimeographed Queen Elizabeth House, Oxford.
- Dixon, R. (1982). "Mobilizing Women for Rural Employment in South Asia: Issues of Class, Caste, and Patronage", Economic Development and Cultural Change, 30.
- Dixon, R. (1983). "Land, Labour and the Sex Composition of the Agricultural Labour Force: An International Comparison", Development and Change, 14.
- Drèze, J., and Sen, A.K., eds. (1987). Hunger: Economics and Policy, forthcoming (Oxford: Clarendon Press).
- Dworkin, R. (1981). "What is Equality? Part 1: Equality of Welfare". Philosophy and Public Affairs, 10.
- Dyson, T. (1982). "India's Regional Demography", mimeographed, London School of Economics.
- Dyson, T. (1987). "Excess Female Mortality in India: Uncertain Evidence on a Narrowing Differential", mimeographed, London School of Economics.
- Dyson, T., and Moore, M. (1983). "On Kinship Structure, Female Autonomy, and Demographic Behaviour in India", Population and Development Review, 9.
- Engels, F. (1884). The Origin of the Family; reprinted (Moscow: Foreign Language Publishing House, 1969).
- Evans, M. (1982), ed. The Woman Question: Readings on the Subordination of Women (London: Fontana).
- Folbre, N. (1984). "Cleaning House: New Perspectives on Household and Economic Development", mimeographed, New School for Social Research.
- Fuchs, V.R. (1983). How We Live (Cambridge: Harvard University Press).
- Gambetta, D., ed. (1987). Trust and Agency (Oxford: Blackwell).
- Gardiner, J., Himmelweit, S., and Mackintosh, M. (1975). "Women's Domestic Labour", Bulletin of the Conference of Socialist Economists, 4.
- Ghosh, A. (1979). "Short-term changes in Income Distribution in Poor Agrarian Economies: A Study of Famines with reference to the Indian Subcontinent", ILO Working Paper.

- Goldschmidt-Clermont, L. (1982). Unpaid Work in the Household (Geneva: ILO).
- Gosling, J.C.B. (1969). Pleasure and Desire (Oxford: Clarendon Press).
- Griffin, J. (1987). Well-being (Oxford: Clarendon Press).
- Griffin, K. (1978). International Inequality and National Poverty (London: Macmillan).
- Gulati, L. (1981a). "Women and Technological Change - A Case Study of Three Fishing Villages", Working Paper, Centre for Development Studies, Trivandrum.
- Gulati, L. (1981b). "The Role of Women from Fishing Households: Case Study of a Kerala Fishing Village", Working Paper, Centre for Development Studies, Trivandrum.
- Hacker, A. (1986). "Women at Work: New York Review of Books", 33 (August 14).
- Hare, R.M. (1981). Moral Thinking (Oxford: Clarendon Press).
- Harriss, B. (1977). "Paddy Milling: Problems in Policy and Choice of Technology", in B.F. Farmer, ed., The Green Revolution. (London: Billing).
- Harriss, B. (1987). "Intrafamily Distribution of Hunger in South Asia", WIDER Conference paper, to be published in Drèze and Sen (1987).
- Harriss, B., and Watson, E. (1984). "The Sex Ratio in South Asia", mimeographed, London School of Hygiene and Tropical Medicine.
- Harrison, J. (1974). "Political Economy of Housework", Bulletin of the Conference of Socialist Economists, 3.
- Harsanyi, J. (1976). Essays on Ethics, Social Behaviour and Scientific Explanation (Dordrecht: Reidel).
- Harsanyi, J. (1977). Rational Behaviour and Bargaining Equilibrium in Games and Social Situations (Cambridge: CUP).
- Hassan, N., and Ahmed, K. (1984). "Intra-family Distribution of Food in Rural Bangladesh", Food and Nutrition Bulletin, 6.
- Himmelweit, S., and Mohun, S. (1977). "Domestic Labour and Capital", Cambridge Journal of Economics, 1.
- Humphries, J. (1977). "Class Struggle and the Persistence of the Working-Class Family", Cambridge Journal of Economics, 1: reprinted in Amsden (1980).
- ILO (1982a). Rural Development and Women in Asia (Geneva: ILO).
- ILO (1982b). Rural Women Workers in Asia (Geneva: ILO).
- ILO (1986). Economically Active Population Estimates and Projections, 1950-2025 (Geneva: ILO)
- Jacob, P. (1983). "The Activity Profile of Indian Women", mimeographed, National Sample Survey, Calcutta.

- Jain, D. (1980). "Women's Employment - Possibilities of Relevant Research", mimeographed.
- Jain, D. (1985). "The Household Trap: Report on a Field Survey of Female Activity Patterns", in Jain and Banerjee (1985).
- Jain, D., and Banerjee, N., eds. (1985). Tyranny of the Household: Investigative Essays on Women's Work (New Delhi: Vikas).
- Jain, D., and Chand, M. (1982). "Report on a Time Allocation Study - Its Methodological Implications", Institute of Social Studies Trust, New Delhi.
- James, J. (1980). "Appropriate Technologies and Inappropriate Policy Instruments", Development and Change, 11.
- Jayawardera, K. (1986). Feminism and Nationalism in the Third World (London: Zed Books).
- Kakwani, N. (1986). "Is Sex Bias Significant?" WIDER Working Paper.
- Kalai, E. (1977). "Nonsymmetric Nash Solutions and Replications of Two-Person Bargaining", International Journal of Game Theory, 6.
- Kalai, E., and Smordinsky, M. (1975). "Other Solutions to Nash's Bargaining Problem", Econometrica, 43.
- Kamsler, V. (1986). "Distribution, Entitlement and the Family", mimeographed, Oxford University.
- Kaneko, M. (1980). "An Extension of the Nash Bargaining Problem and the Nash Social Welfare Function", Theory and Decision, 12.
- Kaneko, M., and Nakamura, K. (1979). "The Nash Social Welfare Function", Econometrica, 47.
- Khan, Q.M. (1985). "A Model of Endowment-Constrained Demand for Food in an Agricultural Economy with Empirical Applications to Bangladesh", World Development, 13.
- Kongstad, P., and Monsted, M. (1980). Family, Labour and Trade in Western Kenya (Uppsala: Scandinavian Institute of African Studies).
- Krishnaswamy, K.S., and Rajgopal, S. (1985). "Women in Employment: A Micro Study in Karnataka", in Jain and Banerjee (1985).
- Kuhn, A., and Wolpe, A. (1978), eds. Feminism and Materialism (London: Routledge).
- Kurian, R. (1982). Women Workers in the Sri Lanka Plantation Sector (Geneva: ILO).
- Kynch, J. (1985). "How Many Women Are Enough? Sex Ratios and the Right to Life". Third World Affairs 1985 (London: Third World Foundation).
- Kynch, J., and Sen, A.K. (1983). "Indian Women: Well-being and Survival", Cambridge Journal of Economics, 7.

- Larwood, L., Stromberg, A.H., and Gutek, B., eds. (1986). Women's Work: An Annual Review (New York: Sage).
- Laslett, P. (1972), with the assistance of R. Wall. Household and Family in Past Time (Cambridge: Cambridge University Press).
- Lloyd, C.B., and Niemi, B.T. (1979). The Economics of Sex Differentials (New York: Columbia University Press).
- Loutfi, M.F. (1980). Rural Women: Unequal Partners in Development (Geneva: ILO).
- Luce, R.D., and Raiffa, H. (1957). Games and Decisions (New York: Wiley).
- McElroy, M.B., and Horney, M.J. (1981). "Nash-Bargained Household Decisions: Toward a Generalization of the Theory of Demand", International Economic Review.
- Mackintosh, M.M. (1979). "Domestic Labour and the Household", in Burman (1979).
- McIntosh, M. (1978). "The State and the Oppression of Women", in Khun and Wolpe (1978); reprinted in Evans (1982).
- McIntosh, J., Nasim, A., and Satchell, S. (1981). "Differential Mortality in Rural Bangladesh", mimeographed.
- Mahmud, W., and Mahmud, S. (1985). "Age-Sex Aspects of the Food and Nutrition Problems in Rural Bangladesh", ILO Working Paper, WEP 10-6/WP74.
- Manser, M., and Brown, M. (1980). "Marriage and Household Decision-Making: A Bargaining Analysis", International Economic Review, 21.
- Marx, K. (1867). Capital, Vol. I. English translation (London: Allen & Unwin, London, 1938).
- Mazumdar, V. (1985). Emergence of Women's Questions in India and the Role of Women's Studies (New Delhi: Centre for Women's Development Studies).
- Mead, M. (1950). Male and Female (London).
- Meillassoux, C. (1972). "From Reproduction to Production", Economy and Society, 1.
- Michael, R.T., and Becker, G.S., (1973). "On the New Theory of Consumer Behaviour", Swedish Journal of Economics, 75.
- Mies, M. (1982). The Lace Makers of Narsapur: Indian Housewives Produce for the World Market (London: Zed Press).
- Milkman, R. (1976). "Women's Work and the Economic Crisis: Some Lessons from the Great Depression", Review of Radical Political Economics, 8.
- Miller, B. (1981). The Endangered Sex: Neglect of Female Children in Rural North India (Ithaca, NY: Cornell University Press).

- Miller, B. (1982). "Female Labor Participation and Female Seclusion in Rural India: A Regional View", Economic Development and Cultural Change, 30.
- Mincer, J. (1962). "Labour Force Participation of Married Women", in H.G. Lewis, ed., Aspects of Labour Economics (Princeton: Princeton University Press); reprinted Amsden (1980).
- Mincer, J., and Polachek, S. (1974). "Family Investments in Human Capital Earnings of Women", Journal of Political Economy, 82; reprinted in Amsden (1980).
- Mitra, A. (1980). Implications of Declining Sex Ratio in India's Population (Bombay: Allied Publishers).
- Molyneux, M. (1979). "Beyond the Domestic Labour Debate", New Left Review, No. 116.
- Molyneux, M. (1982). State Policies and the Position of Women Workers in the People's Democratic Republic of Yemen, 1967-77 (Geneva: ILO).
- Muellbauer, J. (1987). "Professor Sen on the Standard of Living" in G. Hawthorn, ed., The Standard of Living (Cambridge: Cambridge University Press).
- Mukherjee, M. (1985). "Contributions to and Use of Social Product of Women", in Jain and Banerjee (1985).
- Mukhopadhyay, S. (1982). "The Nature of Household Work", mimeographed Delhi School of Economics.
- Nash, J. F. (1950). "The Bargaining Problem", Econometrica, 18.
- Nash, J.F. (1953). "Two-Person Co-operative Games", Econometrica, 21.
- Natarajan, K.S. (undated). "Child Mortality: Rural-Urban and Sex Differentials: Further Analysis of 1972 Fertility Survey", mimeographed Indian Institute of Technology, Bombay.
- Nozick, R. (1974). Anarchy, State and Utopia (Oxford: Blackwell).
- Oaxaca, R. (1973). "Male-Female Wage Differentials in Urban Labour Markets", International Economic Review, 14.
- Oughton, E. (1982). "The Maharashtra Drought of 1970-73: An Analysis of Scarcity", Oxford Bulletin of Economics and Statistics, 44.
- Padmanabha, P. (1982). "Trends in Mortality", Economic and Political Weekly, 17 (7 August).
- Palmer, I. (1975). "Women in Rural Development", mimeographed.
- Palmer, I. (1978). "Women and Green Revolution", mimeographed.
- Phelps, E.S. (1972). "The Statistical Theory of Racism and Sexism", American Economic Review, 62; reprinted in Amsden (1980).
- Phongpaichit, P. (1982). From Peasant Girls to Bangkok Masseuses (Geneva: ILO).

- Pollak, R.A. (1983). "A Transaction Cost Approach to Families and Households", mimeographed, University of Pennsylvania.
- Ravallion, M. (1985). "The Performance of Rice Markets in Bangladesh during the 1974 Famine", Economic Journal, 92.
- Ravallion, M. (1987). Markets and Famines (Oxford: Clarendon Press).
- Rawls, J. (1971). A Theory of Justice (Oxford: Clarendon Press and Cambridge, MA: Harvard University Press).
- Reiter, R. (1975)., ed. Toward an Anthropology of Women (New York; Monthly Review Press).
- Rochford, S.C. (1981). "Nash-Bargained Household Decision-Making in a Peasant Economy", mimeographed.
- Rochford, S.c. (1982). "General Results for Stable Pairwise-Bargained Allocations in a Marriage Market", mimeographed, 1982.
- Rogers, B. (1980). The Domestication of Women (London: Tavistock).
- Rosenzweig, M.R., and Schultz, T.P. (1982). "Market Opportunities, Genetic Endowments, and Intrafamily Resource Distribution: Child Survival in Rural India", American Economic Review, 72.
- Rotberg, R.I., and Rabb, T.K. (1985). Hunger and History (Cambridge: Cambridge University Press).
- Roth, A.E. (1979). Axiomatic Models of Bargaining (Berlin: Springer-Verlag).
- Rowbotham, S. (1973). Women's Consciousness, Man's World (Harmondsworth: Penguin).
- Rubin, J.Z., and Brown, B.R. (1975). The Social Psychology of Bargaining and Negotiation (New York: Academic Press).
- Samuelson, P.A. (1956). "Social Indifference Curves", Quarterly Journal of Economics, 70.
- Scanlon, T. (1975). "Preference and Urgency", Journal of Philosophy, 72.
- Scanzoni, J.H. (1970). Opportunity and the Family (New York: Free Press).
- Schelling, T.C. (1960). The Strategy of Conflict (Oxford: Clarendon Press).
- Schofield, S. (1975). Village Nutrition Studies: An Annotated Bibliography (Brighton, Sussex: Institute of Development Studies).
- Seccombe, W. (1974). "The Housewife and Her Labour under Capitalism", New Left Review, No. 83.
- Sen, A.K. (1970). Collective Choice and Social Welfare (San Francisco: Holden-Day: republished by North-Holland, Amsterdam 1979).
- Sen, A.K. (1975). Employment, Technology and Development, (Oxford: Clarendon Press).

- Sen, A.K. (1976). "Famines as Failures of Exchange Entitlements", Economic and Political Weekly, 11.
- Sen, A.K. (1977). "Starvation and Exchange Entitlement: A General Approach and its Application to the Great Bengal Famine", Cambridge Journal of Economics, 1.
- Sen, A.K. (1982a). Choice, Welfare and Measurement (Oxford: Blackwell, and Cambridge, MA.: MIT Press).
- Sen, A.K. (1982b). Food Battles: Conflicts in the Access to Food, Coromandel Lecture, New Delhi, 13 December; reprinted in Mainstream 8 January 1983.
- Sen, A.K. (1983a). "Economics and the Family", Asian Development Review, 1.
- Sen, A.K. (1983b). "Carrots, Sticks and Economics: Perception Problems in Incentives", Indian Economic Review, 18.
- Sen, A.K. (1984). Resources, Values and Development (Oxford: Blackwell and Cambridge, MA: Harvard University Press).
- Sen, A.K. (1985a) "Well-being, Agency and Freedom: The Dewey Lectures 1984", Journal of Philosophy, 82.
- Sen, A.K. (1985b), Commodities and Capabilities (Amsterdam: North-Holland).
- Sen, A.K. (1985c). "Women, Technology and Sexual Divisions", Trade and Development (UNCTAD), 6.
- Sen, A.K. (1986a). "Food, Economics and Entitlements", Lloyds Bank Review, 160.
- Sen, A.K. (1986b). "Africa and India: What Do We Have To Learn From Each Other?". C.N. Vakil Memorial Lecture, 8th World Congress of the International Economic Association; to be published in the proceedings, edited by K.J. Arrow.
- Sen, A. and Sengupta, S. (1983). "Malnutrition of Rural Indian Children and the Sex Bias", Economic and Political Weekly, 18, Annual Number.
- Sen, A.K., and Williams, B., eds. (1982). Unilateralism and Beyond (Cambridge:Cambridge University Press).
- Sen, G. (1985). "Women Agricultural Labourers - Regional Variations in Traders and Employment", in Jain and Banerjee (1985).
- Sharma, U. (1980). Women, Work and Property in North-West India (London: Tavistock).
- Sheshinski, E. and Weiss, Y. (1982). "Inequality Within and Between Families", Journal of Political Economy, 90.
- Shubik, M. (1983). Game Theory in the Social Sciences: Concepts and Solutions (Cambridge, Mass: MIT Press).
- Singer, H. (1977). Technologies for Basic Needs, Geneva: ILO.

- Slocum, S. (1975). "Women the Gatherer: Male Bias in Anthropology" in Reiter (1975); reprinted in Evans (1982).
- Snowdon, B. (1985). "The Political Economy of the Ethiopian Famine", National Westminster Bank Quarterly Review.
- Solow, R.M. (1984). "Relative Deprivation?" Partisan Review, 51.
- Sopher, D.E. (1980). ed. An Exploration of India: Geographical Perspective on Society and Culture (London: Longman).
- Standing, G., and Sheehan, G. (1978), eds. Labour Force Participation in Low-Income Countries (Geneva: ILO).
- Stone, L. (1977). The Family, Sex and Marriage in England, 1500-1800 (London: Weidenfeld).
- Tilly, L.A. (1985). "Food Entitlement, Famine and Conflict", in Rotberg and Rabb (1985).
- Tilly, L.A. (1986). "Sex and Occupation in Comparative Perspectives", mimeographed, New School for Social Research, New York.
- Vaughan, M. (1985). "Famine Analysis and Family Relations", Past and Present, 108.
- Vaughan, M. (1987). The Story of an African Famine: Gender and Famine in Twentieth-Century Malawi (Cambridge: Cambridge University Press).
- Ventura-Dias, V. (1982). "Technological Change, Production Organisation and Rural Women in Kenya", Working Paper, ILO.
- Visaria, P. (1961). The Sex Ratio of the Population of India, Monograph 10, Census of India 1961 (New Delhi: Office of the Registrar General).
- Visaria, P., and Visaria, L. (1985). "Indian Households with Female Heads", in Jain and Banerjee (1985).
- Waldron, I. (1976). "Why Do Women Live Longer than Men? Soc. Sci. Med.
- Weitzman, L.J. (1981). The Marriage Contract (New York: Free Press).
- Werneke, D. (1983). Micro electronics and Office Jobs: The Impact of the Chip on Women's Employment (Geneva: ILO).
- Wheeler, E.F. (1984). "Intrahousehold Food Allocation: A Review of Evidence", mimeographed, London School of Hygiene and Tropical Medicine.
- Whitehead, A. (1981). "A Conceptual Framework for the Analysis of the Effects of Technological Change on Rural Women", Working Paper, ILO.
- Whitehead, A. (1985). "Gender and Famine in West Africa", mimeographed; forthcoming in Review of African Political Economy.
- Williams, B. (1973). "A Critique of Utilitarianism", in B. Williams and J.J.C. Smart, ed. Utilitarianism For and Against (Cambridge: CUP).

- Williamson, O.E. (1979). "Transaction-Cost Economics: The Governance of Contractual Relations:, Journal of Law and Economics, 22.
- Wyon, J.B., and Gordon, J.E. (1971). The Khanna Study (Cambridge, MA: Harvard University Press).
- Young, K. (1978). "Modes of Appropriation and the Sexual Division of Labour: A Case Study of Oaxaca, Mexico", in Kuhn and Wolpe (1978).
- Young, K., Wolkowitz, C., and McCullagh, R. (1981)., eds. On Marriage and the Market: Women's Subordination in International Perspective. (London: CSE Books).
- Zeuthen, F. (1930) Problems of Monopoly and Economic Welfare (London: Routledge).